



**AMENDMENTS to 7th EDITION ACCREDITATION STANDARDS
Approved January 30, 2009**

**7th Edition Standard prefacing each new standard is in black unbolded print.
New Standards are in Blue**

ISSUE #1 – Fatigue and Sleep Deprivation

02.04.01 The service **must** have written operational policies to address each of the areas listed below:

1. Scheduling and individual work schedules demonstrate strategies to minimize duty-time fatigue, length of shift, number of shifts per week and day-to-night rotation. *(see References in for circadian rhythm and other fatigue studies.)*
2. On-site shifts scheduled for a period to exceed 24 hours are not acceptable. Twenty-four-hour shifts are acceptable if:
 - a. Medical personnel are not required to routinely perform any duties beyond those associated with the transport service.
 - b. Medical personnel are provided with access to and permission to uninterrupted rest after daily medical personnel duties are met.
 - c. The physical base of operations includes an appropriate place for uninterrupted rest.
 - d. Medical personnel must have the right to call "time out" and be granted a reasonable rest period if the team member (or fellow team member) determines that he or she is unfit or unsafe to continue duty, no matter what the shift length. There should be no adverse personnel action or undue pressure to continue in this circumstance.
 - e. **Management** should monitor transport volumes and personnel's use of a "time out" policy.

3. The policy must address the following:

- a. Medical personnel must have at least eight hours of rest (**pilots must have ten hours of rest as consistent with Part 135 regulations**) with no work-related interruptions prior to any scheduled shift of twelve hours or more. The intent

is to preclude back-to-back shifts with other employment, commercial or military flying, or significant fatigue-causing activity prior to a shift.

b. Number of consecutive shifts and day to night rotation must be closely monitored by management for pilots and medical crews.

02.06.01 – Initial and Continuous education *(added to current requirements)*

1. Initial training program.....
 - c. Didactic Component of initial Education.....
 - **Sleep deprivation, sleep inertia, circadian rhythms and recognizing signs of fatigue.**
2. Continuing education/staff development.....
 - a. Didactic continuing education must include an annual review of :
 - **Sleep deprivation, sleep inertia, circadian rhythms and recognizing signs of fatigue.**

07.01.01 – Risk Assessment

- a. Senior management should establish a process to identify risk escalation to ensure that safety and risk issues are addressed by the appropriate level of management up to and including the senior level.
- b. Operational Risk Assessment tools should include but not be limited to issues such as: mission acceptance **(that includes a factor for pilot and crew fatigue*)** aviation decision making, mission acceptance – medical decision making, search and rescue, public relations events, training, maintenance and re-positioning missions.

*(*See References for fatigue measuring tools)*

ISSUE #2 – Business Ethics

01.10.00 The transport service develops and demonstrates use of a written code of ethical conduct in all areas of business that demonstrate ethical practices in business, marketing & professional conduct.

1. The code of conduct guides the service when confronted with potential compliance or ethical issues.
2. **Whenever possible, services that respond directly to the scene will transport patients to the nearest appropriate hospital (i.e. major trauma to the nearest**

Level I or II Trauma Center, stroke patients to a hospital with specialized stroke care, AMI patients to a hospital with a staffed cath lab, major burns to a Level I or II burn center, high-risk OB patients to a hospital with OB services and a Level II or III NICU, etc.). See References for CDC trauma triage guidelines.

3. The code of conduct outlines the service's standards for ethical behavior as well as contact information and reporting protocols if a standard has been violated.
4. The code of conduct outlines ethical billing practices.

ISSUE #3 – Hospital Helipads and Scene Landings

14.01.10 There should be a policy to address more than one running aircraft at any one time and a policy to address permission to land or take off from the hospital.

1. Communications policies will include:

- a. Procedures that coordinate arrivals and departures with referring and receiving hospital helipads – specific contact arrangements are pre-arranged for each frequently used location.**
- b. Procedures that coordinate arrivals and departures from hospital helipads with other air medical services in the region.**
- c. Staging if more than one aircraft is expected**
- d. Air to air communications**
- e. Hosting common frequencies**
- f. Procedures that require communications specialists to ask if more than one aircraft is incoming to the same hospital helipad or scene.**
- g. Written agreements with local, regional or state agencies that incoming aircraft will announce in the blind on a common frequency when operating into a hospital (and scenes) where no common frequency has been pre-established. At 10 minutes from ETA, any inbound aircraft should communicate on 123.025 or commonly agreed upon frequency.**

2. Crew Coordination

- a. Strict enforcement of sterile cockpit**
- b. One medical crewmember taking active part in watching for obstructions**

during the critical stages of flight.

c. Before departing from a scene or a sending institution, the medical crew and the pilot should discuss any alternative hospitals that they might need to divert to should the patient's condition change. The pilot and medical crew are encouraged to pre-program any radios or navigation equipment for this alternative destination, to minimize the workload required to affect this change should the need arise as coordinated with the communications center.

3. It is strongly encouraged that the program develops pre-determined landing sites for scene coordination with ground agencies where possible.

ISSUE #4 - Aviation QM to include:

08.06.07 Operational criteria to include at a minimum the following quality indicators with upper and lower control limits as set by the program to enhance safety and quality; not to be used for punitive measures.

1. Number of completed transports with benchmarks for lift-off (lower and upper control limits – for example: lift-offs under normal conditions that are slower or faster than normal parameters). Benchmarks set by the program may be longer for night-time operations.
 2. Number of aborted or canceled flights/transport due to weather with evidence of tracking and trending aborts/diversions for weather that interrupt or delay the patient transport and evidence of loop closure if trends are found.
 3. Number of aborted or canceled flights/transport due to maintenance with evidence of tracking and trending aborts/diversions for maintenance that interrupt or delay the patient transport and evidence of loop closure if trends are found.
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ISSUE #5 – Safety Management System to further address:

07.01.01 Management is responsible for a Safety Management System (*See References in Appendix of 7th Edition*) but management and staff is responsible for making operations safer.

1. The Safety Management System is proactive in identifying risks and eliminating injuries to personnel and patients and damage to equipment.
2. A Safety Management System includes:
 - a. A statement of policy commitment from the accountable executive.

- b. A non-punitive system for employees to report hazards and safety concerns.
 - c. A system to track, trend and mitigate errors or hazards.
 - d. A system to track and document incident root cause analysis.
 - e. A Safety Manual.
 - f. A system to audit and review organizational policy and procedures, on going safety training for all personnel (including managers), a system of pro-active and reactive procedures to insure compliance, etc.
3. There is evidence of management's decisive response to non-compliance in adverse safety or risk situations.
- 4. The program has a process to measure their safety culture by addressing:**
- a. Accountability – employees are held accountable for their actions.**
 - b. Authority – those who are responsible have the authority to assess and make changes and adjustments as necessary.**
 - Standards, policies and administrative control are evident.
 - Written procedures are clear and followed by all.
 - Training is organized, thorough and consistent according to written guidelines.
 - Managers represent a positive role model promoting an atmosphere of trust and respect.
 - c. Professionalism – as evidenced by personal pride and contributions to the program's positive safety culture.**
 - d. Organizational Dynamics.**
 - Teamwork is evident between management and staff and among the different disciplines regardless of employer status as evidenced by open bi-directional and inter-disciplinary communications that are not representative of a "silo" mentality.
 - Organization represents a practice of encouraging criticism and safety observations, and there is evidence of acting upon identified issues in a positive way.

- Company values are clear to all employees and embedded in everyday practice.

ISSUE #6 – Aircraft Equipment and Flight Following

05.02.00 The aircraft must either have a 406 Mhz emergency locator transmitter (ELT) or must be monitored at 3 minute intervals (at a maximum) or less by a satellite tracking system.

If using the satellite tracking system and the aircraft has not been upgraded to a 406 Mhz ELT, a 121.5 Mhz ELT should not be disarmed because it may be monitored by other aircraft.”

06.05.04 Flight Following – **Satellite tracking systems are strongly recommended for all aircraft and required for aircraft that do not have a 406 Mhz ELT.**

ISSUE #7 – Additions to the PAIP

06.04.02 A readily accessible post accident/incident plan must be part of the flight following protocol so that appropriate search and rescue efforts may be initiated in the event the aircraft or ground ambulance is overdue, radio communications cannot be established nor location verified. There should be a written plan to initiate assistance in the event the ambulance is disabled.

1. Post accident/incident plans are easily identified, readily available, and understood by all program personnel and minimally include:
 - a. List of personnel (with current phone numbers) to notify in order of priority (for communications specialist to activate) in the event of a program incident/accident (for air or ground). This list should minimally include sponsoring organization individuals where applicable, risk management attorney, family members of team members, family of patient, referring hospital, receiving hospital, security (as applicable), human resources (as applicable), media relations or pre-identified individual who will be responsible for communicating with the media, state health department and other team members.

Notification plans include appropriate family members and support services to family members following a program tragic event.

- There must be timely notification of next of kin (*next of kin is no longer strictly defined at the federal level so the crew member determines this on a data sheet and reviews annually*).

- It is strongly recommended that:

Family assistance includes coordination of family needs immediately after the event e.g. transportation, food, lodging, memorial/burial service, condolences, initial grief support services/referrals, (usually through appointment of a family liaison).

Continuity includes follow through with the family after the event (e.g. submission of crew to national EMS memorial service, the continuation of grief counseling and support referrals, the inclusion of families in decision-making on anniversaries/memorials, and check-ins following release of NTSB reports, etc.)

b. Consecutive guidelines to follow in attempts to:

- Communicate with the aircraft or ambulance.
- Initiate search and rescue or ground support.
- Have a back-up plan for transporting the ground ambulance patient in the event of an incident or accident and/or the ambulance is inoperable.
- Have an aviation individual identified as the scene coordinator to coordinate activities at the crash site.

ISSUE #8 – High Visibility Clothing (Due to Federal Highway Administration (FHWA) regulation that took effect November 24, 2008 as defined by the ANSI/ISEA 107 standard – see References)

02.04.01

7. Physical well-being is promoted through:

- a. Wellness programs that promote healthy lifestyles (e.g. balanced diet, weight control, no smoking).
- b. Evidence of an injury prevention program and ergonomic strategies to reduce employee injuries.
- c. Protective clothing and dress code pertinent to:
 - Mission profile - such as turn-out gear available at scene for medical personnel who assist with heavy extrication.

- Safe operations, which may include:
 - Boots or sturdy footwear for on-scene operations.
 - Flame retardant clothing.
 - Appropriate outerwear pertinent to survival in the environment.
 - Flight helmets (required for RW operations)
 - **High visibility reflective vests must be worn by flight crews according to the ANSI-SEA 107 standard. This applies only to rotorwing services that respond to scenes.**

REFERENCES

I. REFERENCES ON SLEEP, SLEEP DEPRIVATION, FATIGUE AND SLEEP INERTIA

SLEEP INERTIA

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Banks S, Dinges DF. Behavioral and Physiological Consequences of Sleep Restriction. *J Clin Sleep Med*. August 2007; 3(5): 519-28.

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Dorrian J, Lamond N, van den Heuvel C, Pincombe J, Rogers AE, Dawson D. A Pilot Study of the Safety Implications of Australian Nurses' Sleep and Work Hours. *Chronobiol Int*. June 2006; 23(6): 1149-63.

Dorrian J, Roach GD, Fletcher A, Dawson D. Simulated Train Driving: fatigue, self-awareness and cognitive disengagement. *Appl Ergon*. March 2007; 38(2): 155-66.

Dawson D, McCulloch K. Managing Fatigue: It's About Sleep. *Sleep Med Rev*. October 2005; 9(5): 365-380.

II. FATIGUE MEASURING TOOLS

Epworth Sleep Scale

McPherson Sleep Deprivation Symptoms/Test
by: Dr. Steven MacPherson (see example below)

Stanford Sleepiness Scale

III. Revised American National Standard for High-Visibility Safety Apparel and Headwear, ANSI/ISEA 107-2004

http://www.workzonesafety.org/training/webinar/2008_wz_webinar_high_visibility_clot_hing

IV. "Guidelines for Field Triage of Injured Patients" 1/23/09 Vol 58, No.RR-1 www.CDC.gov

EXAMPLE

Sleep Deprivation Symptoms/Test

by: Dr. Steven MacPherson

Sleep Deprivation Symptoms - A Common Modern Day Concern

Sleep is being considered more as a luxury these days rather than the necessity that it is. People are trying to squeeze more wakeful hours out of their day (or not so wakeful) than is reasonably healthy, resulting in sleep deprivation symptoms. With staying ahead of the competition, getting one more project accomplished, catching the 11:00 news (remember: "no news is good news"), or worse, the late night talk shows, there seems to be no limit to the rationalizations for staying up "just a little longer". Others may be trying to get enough sleep but for various reasons may be suffering with some form of insomnia or sleep apnea. Whatever the reason or excuse, we need adequate sleep to regenerate our mind and body, to prepare us for the challenges of the following day(s). Yet most Americans are cheating themselves of enough sleep and are experiencing many sleep deprivation symptoms.

Sleep Deprivation Symptoms - More Than Just Tiredness

The most obvious sleep deprivation symptoms are exhaustion, fatigue and lack of physical and mental energy. However, fatigue can have a profound affect on our emotional state leading to sadness, depression, moodiness and anger. Sleep deprivation will adversely affect both our physical and cognitive abilities leading to poorer performance at work and/or at school. In the long run, sleep deprivation can be a major contributor to serious chronic illness.

Following is a Sleep Deprivation Symptoms Questionnaire:

Sleep Deprivation Symptoms - Answer TRUE or FALSE to each

1. I need an alarm clock in order to wake up in time for work or school.
2. It's a struggle for me to get out of bed in the morning.
3. Weekday mornings I hit snooze bar several times to get more sleep.
4. I feel tired, irritable and stressed out during the week.
5. I have trouble concentrating and remembering.
6. I feel slow with critical thinking, problem solving and being creative.
7. I often fall asleep in boring classes/meetings or in warm rooms.
8. I often fall asleep within five minutes of getting into bed.
9. I often feel drowsy while driving.
10. I often sleep extra hours on weekend mornings.
11. I often need a nap when I get home from school or work.
12. I have dark circles around my eyes.

Sleep Deprivation Symptoms - Scoring:

Give yourself one point for every "true" response on this Sleep Deprivation Symptoms Questionnaire.

Total Score: _____

If you have a score of 3 or higher on the Sleep Deprivation Symptoms Questionnaire you are definitely sleep deprived. You could easily improve your mood, performance and health by getting more sleep!